

DOES SOUND CREATE CROP CIRCLES?

Experiments with plants and sound have produced effects similar to those analysed in and around crop circles, suggesting that particular sonic frequencies could be creating these beautiful, mysterious designs.

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Smashing the Myth that "All Crop Circles Are Hoaxes"

During the twilight days of 1998, small articles tucked away in the nether regions of the British press quietly announced "Unknown Force Was Behind Corn Circles, Claims Hoaxer". This dramatic U-turn by the surviving member of the infamous Doug and Dave duo—the English sexagenarians who from 1991 misled the world with tales of their crop-flattening prowess with planks of wood—illustrates that the hand of man materialised in crop circle lore long after the real phenomenon had manifested.

Although hoaxers claim to have orchestrated the phenomenon in 1978, unpublished evidence at the time showed approximately 200 sporadic reports of crop circles around the world throughout the 1900s, with dozens of eyewitnesses reporting crop circles forming in a matter of seconds as far back as 1890. Several highly descriptive accounts were even documented in 1678 by Robert Plot, then curator of the Ashmolean Library in Oxford, England. If hoaxers are responsible for crop circles, then they appear to have mastered the art of time travel, in which case it is *they* who ought to be under scientific scrutiny.

To date, some 10,000 crop circles have been catalogued in 29 countries worldwide, and their anomalous features continue to defy human replication: plants bent an inch above the soil, their cellular structure altered, their stems lightly burned around the base; alterations to the crystalline structure of the affected soil; evaporation of groundwater; alteration of the local electromagnetic field; and dowsable, long-lasting energy patterns, not to mention hundreds of measured effects on the human biological field.

So much, then, for two guys and a piece of wood. But thanks to a virtual embargo on the coverage of research throughout the media, a popular myth has developed that all crop circles have been nothing more than a prank with a plank. By definition, a hoax is a forgery, and a forger requires an original from which to copy. So what is this "unknown force" that creates genuine crop circles? One answer may lie with sound.

Sound and Sacred Geometry

Traditionally, sound has been considered a prime universal force in the creation of matter. This concept is echoed in all faiths and traditions: "In the beginning was the Word, and the Word was with God", so the Bible, the Q'ran and the Rig Veda remind us. In a similar way, Hopi and Navajo religious traditions assert that, in ancient times, shamans could utter words onto sand and create patterns not dissimilar to the Hindu mandalas—those geometric paintings held to be expressions of vibrations from the unseen Universe. Consequently the Eastern faiths, Islam in particular, chose this sacred geometry to express the image of God. In the 12th century these geometric principles were encoded in the design of Gothic cathedrals, and their application is now known to enhance these buildings' sonic effects.

Geometry, sound, resonance and vibration are fundamental to our supposedly physical world. When the primeval Hindu sound, the "OM" (from which is derived our modern term "hum"), is sung into a tonoscope (a device for converting the human voice into visible form), it is possible to see geometric shapes attributed with "sacredness". Under the microscope, even atoms are seen as harmonic resonators, and their structures are composed of geometric rhythms whose proportions are similar to the mathematical intervals governing the notes of the music scale. For example, the gap between the notes C and G—a musical fifth—can be represented geometrically as a pentagram.

As the expression of number in space, geometry is inextricably linked to sound, since

the laws of the former govern the mathematical intervals that make up the notes in Western musical scales, also known as diatonic ratios. Physical reality, it seems, is governed by geometric arrays related to sound frequencies.

One of the mathematical minds studying crop circles was the late Professor Gerald Hawkins. In February 1992 he published an interesting challenge to the half a million subscribers of *Science News*. Prof. Hawkins had studied the work of Euclid, a Greek mathematician of the third century BC, whose treatises on mathematics pretty much form the basis of our knowledge today. He used the principles of Euclid to prove that four geometric theorems can be derived from the relationships of design elements in crop circles. More significantly, he discovered a previously unknown fifth theorem from which he could derive the other four. Euclid himself had not written it in his 13 treatises on mathematics, and yet Prof. Hawkins showed that a gap existed in Euclid's work where logically it ought to have fitted.

Despite an open challenge to the high IQ readership of *Science News*, no one was able to create this fifth theorem. Needless to say, it came as a slight shock when it materialised as a 160,000-square-foot crop circle at Litchfield, England, in 1995 (see fig. 1).

Incredibly, the theorem did not appear overtly, and, just like the challenge laid by Hawkins, the Circlemakers required it to be decoded from within their own design.

By their nature, the crop circle theorems produce diatonic ratios, so a link now exists between crop circles and musical notes, which are the by-product of sound frequencies. And by 1995, crop circles bearing unmistakable physical associations with sound began to appear. One contained a curious ratchet feature from which is extracted a musical diagram, the Lambdoma, dating to the ancient Egyptian mystery schools. Also known as

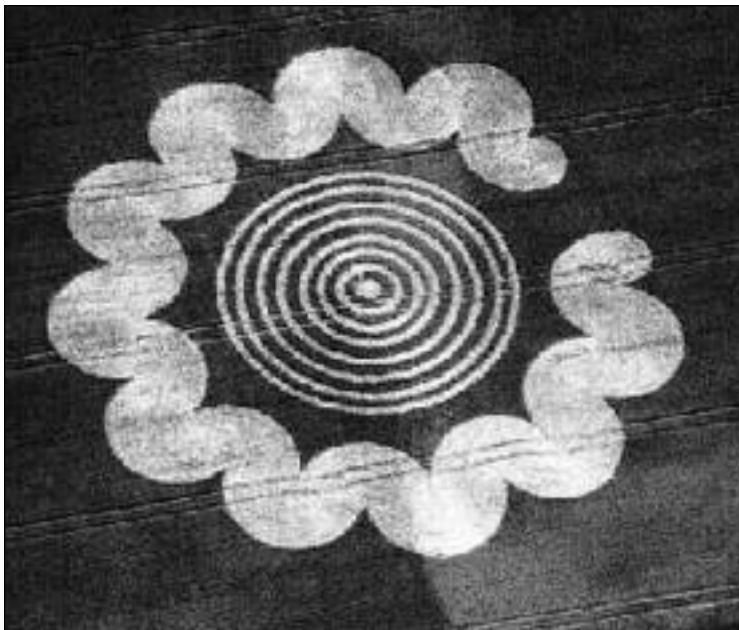


Figure 1: Crop circle at Litchfield near Dunley, Hampshire, UK, formed 4 July 1995. Photograph © Steve Alexander 1998.

the Pythagorean Table, it defines the exact relationships between musical harmonics and mathematical ratios (see figs 2a, 2b).

But it was a convincing crop circle etched in barley at Goodwood Clatford, England, in 1996—which had its plants bent six inches from the top—that gave the proverbial nod to sound, for here was a representation of a cymatic pattern (see fig. 3).

Cymatics is the study of sound waves and their interaction with physical substances. One of its modern pupils was Swiss scientist Hans Jenny who, throughout the 1950s to 1960s, painstakingly captured on film the effects of sound as it interacted with powders and liquids. He observed how sound vibration created geometric shapes: a low frequency produced a simple circle encompassed

Cymatics is the study of sound waves and their interaction with physical substances. Low frequencies produce a simple circle encompassed by rings, whereas higher frequencies increase the number of concentric rings around a central circle.

by rings, whereas a higher frequency increased the number of concentric rings around a central circle. As the frequencies rose, so too did the complexity of shapes, to the point where tetrahedrons, mandalas and other sacred geometric forms could be discerned.

Just as the Egyptians had once described geometry as "frozen music", so Jenny now enabled humanity to see it. Jenny also provided a physical connection to the creation of crop circles I'd been looking for, since many of the vibrational patterns captured in his photos mimic

their designs: from the simple circle surrounded by concentric rings, typical of early 1980s designs, to the tetrahedron and the complex star fractals of the 1990s (see fig 4).

Visually, then, the connection is undeniable. But what evidence links sound and crop circles at a physical level?

Sonic Effects in the Field and in the Laboratory

• Audible sound

Many accounts exist of a trilling sound heard by the 80 reported witnesses to crop circles forming. This unusual noise, which sounds like a cross between a cicada and a waterfall, was captured on magnetic tape in 1989 during a night watch of a field at Cheesefoot Head, England, by a group of researchers. It was duly sent to NASA's Jet Propulsion Laboratory in Pasadena, where it was brought to the attention of Robert Weiss, the man who had previously analysed the famous Watergate tapes. He concluded that the noise was not related to any type of bird or insect, and due to its looping, rhythmic nature it appeared to be of intelligent, mechanical origin. Further, it contained a frequency of 5.0–5.2 kHz.

Later that summer, the trilling sound was captured again—this time by a BBC cameraman whilst recording an interview inside a crop circle. A few seconds after its appearance, it rendered his US\$55,000 camera useless. According to the technicians who later rebuilt the equipment, the sound frequency had interfered with the circuitry to such a degree that the camera would not work after that episode.

Interestingly, many latter-day Australian Aborigines relate to this trilling sound. During their ceremonies to contact their "sky spirits", a specially shaped piece of wood called a *bora* is attached to the end of a long string and whirled, creating a noise practically identical to the crop circle sound. It was later discovered that not only have

crop circles appeared in Australia, they have also manifested throughout Aboriginal myths, just as their geometries have appeared in ancient Aboriginal rock paintings.

But back to that 5 kHz connection, since it has taken me on a journey of extraordinary connections, particularly regarding the way in which sound interacts with plants and soil. Back in the 1950s, American agricultural researcher George Smith found that exposing corn to sound frequencies produced a higher heat content in soil as well as a slight burnt appearance in the plants. Such effects are consistent with the soil of crop circles, where the affected area appears noticeably drier—in some cases, baked—compared with the rest of the field, even despite overnight rain; the same applies to the "slight burning" at the base of crop circle stalks. Oddly enough, Smith speculated at the time that particular sound frequencies also increased molecular activity in plants.

Three decades later, such activity was indeed discovered in plant samples taken from crop circles. Tests performed since 1989 by Michigan-based physicist Dr W. Levegood consistently show how the energy creating crop circles affects seed embryo and plant growth and elongates the plants' nodes, even altering the pattern of their crystalline structure.

The sudden and abnormal growth in plants affected by the energy of crop circles was attributed by Levegood to microwaves. However, microwaves have the ability to render biological systems sterile, and an overdose will even kill organisms. Crop circle plants, on the other hand, are certainly alive and well, so there is another answer.

Already conversant with discoveries by Russian scientists that certain sound frequencies noticeably affected the growth of plants and seeds, Mary Measures and Pearl Weinberger experimented with sound at the University of Ottawa throughout the 1960s. They succeeded in accelerating growth in wheat, but the sound also produced a resonant effect in the plants' cells, thereby affecting their metabolism. And the frequency applied was identical to the crop circle trilling noise: 5 kHz.

Perhaps the greatest connection linking sound to the manifestation of crop circles lies in their greatest anomaly: the permanent bending of the plants' stems. In 1968, laboratory experiments at Temple Buell College, Colorado, measured the effects of music

on plants by subjecting them to different tones. Exposure to heavy metal music made the plants tilt in the opposite direction or die, whereas classical music lulled the plants to lean toward the speakers. But in the case of Hindu devotional music—the type played by the sitar player Ravi Shankar—the stems bent in excess of 60° to the vertical, perhaps the closest any human has ever come to recreating that right-angle bend common to plant stems in genuine crop circles.

Interestingly, applications of Indian devotional song to plants

during the 1930s at Annamalai University, India, also showed a number of similar biophysical changes to those which occurred in plants collected from crop circles and analysed by Dr Levegood.

Sound as one energy source capable of creating crop circles now becomes very feasible. But what type of sound coaxes plants to bend and lie down by applying firm and gentle pressure and, given the intricacy and complexity of latter-day patterns, with a fine degree of precision?

• Ultrasound

Interestingly, ultrasound is capable of interacting with physical elements to such an incredible degree. It can be aimed like a laser beam, and specific frequencies can be focused to cause certain kinds of molecules to vibrate while others nearby are left unmoved.

The higher the frequency of ultrasound, the greater its ability to be directed. This requires frequencies in the high MHz range, such as those detected for over a decade inside crop circles. The readings generally hover in the vicinity of 260–320 MHz. However, the frequencies inside them appear to increase each year, and relative to the increase in their geometric complexity. This mirrors Jenny's experiments, which show that a relationship exists between the complexity of cymatic geometries in proportion to the dispensed sound frequencies. In other words, the

higher the frequency, the greater the geometric intricacy.

Such extremely high frequencies are known to affect states of awareness and consciousness in humans, and visitors to crop formations often report this.

Such effects are traditionally associated with sacred spaces—stone circles in particular—and it is interesting to note that ultrasound has been detected at stone circles and standing stones in



Figure 2a: Crop circle at Andover, Hampshire, UK, formed July 1995.

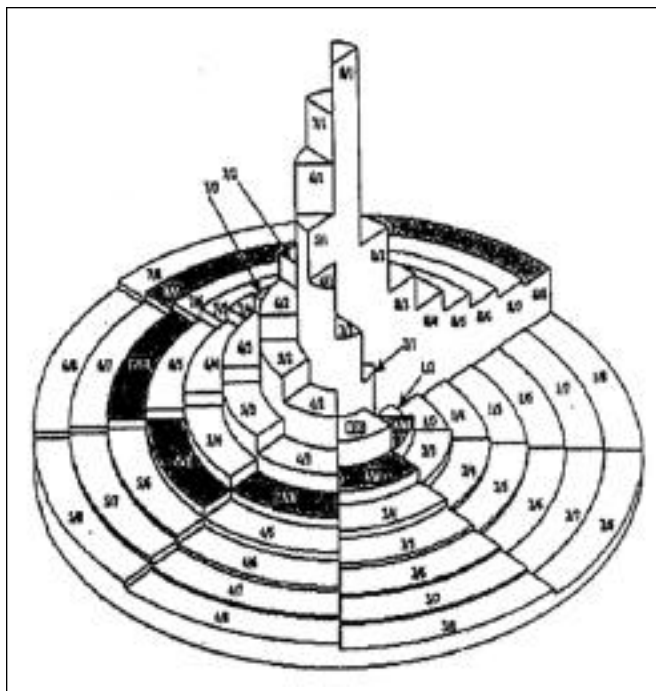


Figure 2b: Pythagoras' Circular Lambdaoma, which contains all musical ratios. Diagram © Robert Faulkrod.

England. When tuned in the MHz range, ultrasound prevents damage to sensitive tissue, so its healing properties are today used in the treatment of muscular ailments. Again, this mirrors the folklore of sacred spaces—and as far as crop circles are concerned, hundreds of people have also reported healings. One long-time sufferer of Parkinson's disease stopped shaking. A man with a retinal eye tumour, 99 per cent malignant, saw the tumour shrivel away after contact with crop circles; this case is clinically documented in New Hampshire, and the patient's doctor remains at odds to explain this.

• **Infrasound**

Below 20 Hz, sound becomes infrasonic, and such frequencies influence biological processes. And here lies the direct connection to crop circles.

Experiments throughout the 1980s at the Princeton Engineering Anomalies Research (PEAR) Laboratory demonstrate that the acoustic power of infrasound, when combined with high pressure, boils water inside a cavity in one nanosecond.

As water heats, it expands; and in the case of crop circle plants and their water-filled stems, a close look reveals tiny holes in their nodes (the plant's "knuckles"), indicating that the superheated water has blown outwards. The bases of the stems are made subtle like molten glass by the heat, leaving the now top-heavy plants to collapse into their new horizontal position. Since this action (called "vapour cavitation") creates local temperature increases of hundreds of thousands of degrees for a fraction of a second, it is now not difficult to see how millions of gallons of groundwater can disappear within and around the perimeter of a crop circle or why the plants attain their slightly burnt appearance.

Combine this with Levengood's discovery of microscopic blow-holes in the plants' cell-wall pits (indicating the rapid boiling of water inside the plant), and everything starts to fall into place.

Infrasound is also capable of atomising water molecules, creating a fine mist, and farmers in England and Canada have witnessed columns of mist rising from within newly arrived crop circles.

Finally, the lower the operating frequency of infrasound, the

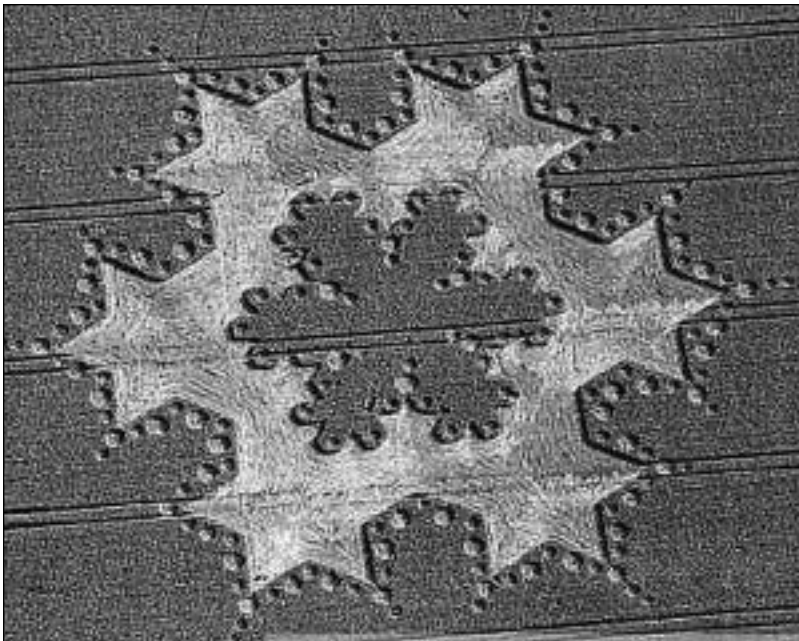


Figure 4: Crop circle at Milk Hill, near Alton Barnes, Wiltshire, formed August 1997. Photograph © Steve Alexander 1998.



Figure 3: Graphic of crop circle at Goodworth Clatford, near Andover, Hampshire, formed June 1996. From www.cropcircleconnector.com.

greater the effect, and 18 Hz is the lowest safety threshold below which the pressure formed by infrasound is known to produce disruption to chromosomes.

Every northern summer, crop circle plants of every variety are sent to Dr Levengood for blind-testing, and some samples inevitably show unmistakable disruption to their chromosomes. Yet give him samples from man-made designs and he finds something remarkable: perfectly normal plants!

Psychic Questing with the Circlemakers

So, who is in control of this "technology" that is manifesting these euphonious crop circles? In England, one highly respected psychic individual inadvertently vectored information about the origin of crop circles during a trance session. Her name is Isabelle Kingston.

Psychic ability is undoubtedly the hardest practice to prove because of the social barriers placed in front of the quest for its understanding, the biggest of all being ridicule. Yet since the 1950s, Soviet parapsychologists have systematically established the sixth sense as a valid means of communication.

What gives Eastern scientists the edge is their deep-rooted understanding that nature is composed of both the seen and the unseen, and that many of its phenomena—like ultrasound, infrasound and the greater portion of the light spectrum—lie beyond our five limited senses of perception.

In Bulgaria, psychic abilities have proved so useful that they have been applied throughout education and medicine. In the West, despite lack of public acknowledgement, the employment of psychics is becoming more commonplace than one might think. Psychics are today employed in successfully locating geological faults, in crime solving, even in predicting earthquakes. The military has admitted working with psychics, both in remote viewing and in remote influencing of policymakers, so something obviously works.

The information vectored by Isabelle Kingston in

1982 came from the Watchers, a universal group consciousness who appear throughout history, serving as helpful guides to humanity during its times of tumultuous change. As the Shining Ones or Els, they are featured throughout ancient Egyptian texts. They also facilitated the building of Europe's tallest mound, Silbury Hill ("Sil-bury" means "hill of the shining beings").

The problem with the information received by Isabelle was that, at the time, few knew what a "crop circle" was, so when the Watchers said they would provide signs of their purpose in the fields at Silbury Hill within seven days, no one in Isabelle's group knew what to expect. Seven days later, a group of five crop circles arranged like a Celtic cross manifested at the base of the 5,000-year-old sacred site.

In succeeding years, Isabelle would be provided with further instructions ahead of time as to the circles' locations and physical attributes. Their appearance was often closely followed by military helicopters which seem to be able to pick up their electromagnetic fingerprint on radar.

The main purpose behind the glyphs, we are told, is to feed information into the planet's subtle energy grid, thus providing human beings with the tools that will help them wake up to their responsibilities as co-creators and achieve their greater potential.

To some, the message may seem somewhat simplistic, even utopian, yet there is no doubt that we are living in times of great upheaval, and whatever choices we are making as a collective will affect generations to come. What is already certain is that the tens of thousands of people who have come into contact with crop circles have taken with them a more positive world-view, and this change in perception is quietly seeping into the everyday world.

The Watchers spoke of technology yet to be deciphered from the glyphs (spinning disc and antigravity devices based on the designs are being developed as I write), and how the patterns are connected to all ancient sacred sites via subtle energies. It has since been discovered that all genuine crop circles indeed lie at the crossroads of invisible electromagnetic pathways which criss-cross the entire globe, linking all sacred sites.

They also spoke of the designs being essentially created through thought processes sent from other levels of awareness. These vibrations transform into sound and light as their frequencies are slowed down by our atmosphere and the laws of the physical world. Indications of these processes would eventually be discovered in the plants and the soil by people who'd be communicated with at a subtle level of exchange.

The Sound of Transformation

The musical scale, constructed on the harmonics of sacred geometry and now found within the framework of crop circles, represents the mathematical structure of the soul of the world because it embodies the essence of the Universe. So it's no coincidence that a large percentage of crop circles can be identified with, and by, ancient cultures who to this day honour their histories through song and music, their healing rituals performed with

sound. This relationship is applied in Buddhist mandalas, whose elaborate geometries are used to alter states of consciousness. Perhaps it is not by coincidence that crop circle designs mirror these intricate patterns, just as they bear an uncanny familiarity to Jenny's materialisations of sound.

If sound vibrations are creating crop circles, is it not possible that they can arouse the individual at a spiritual level? After all, it's through music that whole human experiences are celebrated and carried on from generation to generation. It is very probable that the very shape of the human ear—more specifically, the cochlea—is a spiral constructed according to the harmonic laws of tone, just as the same spiral shape is the primary form from which thousands of crop circles have sprung.

Music is a carrier for social change: the effect of Handel's music is believed to have reversed the lax moral values prevalent throughout early Victorian England, just as the anarchic overtones of Punk music corralled disillusioned youth into fighting an

Establishment that held no tolerance for those who stepped outside its rules.

The effects on people's awareness after contact with crop circles is similarly documented. In 1990, a pictogram at Alton Barnes sported the trident of Neptune or Shiva—figures traditionally associated with transformation. Ironically, it was through exposure to this unique crop circle that millions around the world felt transformed, just as images of crop circles today continue to enlighten the awareness of those who come into contact with them.

If sound is one of the formative principles behind crop circles, it is not surprising that these formations are leaving psychological impressions on those whose antennae are extended and receptive to their tune.

About the Author:

Freddy Silva is a writer and art director who has researched crop circles and sacred spaces from a multidisciplinary point of view since 1990. He is today one of the world's leading experts on these subjects as well as a bestselling author. His comprehensive book *Secrets In The Fields: The Science And Mysticism of Crop Circles*

(Hampton Roads, 2002; reviewed in NEXUS 9/06) is available from his website, *The Crop Circular*, at <http://www.lovely.clara.net>. The original version of this article, with accompanying colour photographs, can also be viewed at his website. Mr Silva is a scheduled speaker at the NEXUS Conference in Brisbane on 23–25 September.

Further Reading

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